Appendix C: Kihei Traffic Master Plan

KIHEI TRAFFIC MASTER PLAN

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Prepared for:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

In cooperation with:

COUNTY OF MAUI DEPARTMENT OF PUBLIC WORKS
COUNTY OF MAUI PLANNING DEPARTMENT

Prepared by:

KAKU ASSOCIATES, INC.
1453 Third Street, Suite 400
Santa Monica, California 90401
(310) 458-9916

Ref: 737

I. INTRODUCTION

The State of Hawaii and the County of Maui have entered into an agreement under which both jurisdictions have agreed to participate in a Countywide Transportation Planning Process (CTPP) for the County of Maui. The basis for this agreement is the understanding that the two jurisdictions will jointly participate in a cooperative, comprehensive and continuing (3C) transportation planning process that will result in the preparation of a long-range land transportation improvement plan for the County. The document which describes the elements of the overall countywide plan, County of Maui Long-Range Land Transportation Plan, Kaku Associates, March, 1996, serves as the primary reference for the Kihei Traffic Master Plan.

During the development of the work program for the Maui islandwide study, it was determined that the Community of Kihei was also in need of short-term traffic solutions that could be implemented within a shorter timeframe. It was also determined that the improvement program for Kihei should address issues and concerns of a more localized nature. Therefore, the work program for the long range land transportation plan for Maui was modified to include a short-range traffic analysis for the Community of Kihei. The analysis for this program would not address the regional and sub-regional highways, but would identify improvements needed on the collector and local streets and their intersections.

The planning process for the improvement program for Kihei included working with and considering the comments and suggestions from two committees: the Technical Advisory Committee (TAC) which is composed of senior staff of the State of Hawaii Department of Transportation, County of Maui Department of Public Works and the County of Maui Planning Department; and the Citizen Advisory Committee (CAC) which is made up of members representing a broad range of interest groups. The role of the CAC is to solicit public input and advise the decision makers by identifying the concerns and issues regarding transportation needs, by reviewing potential plans and programs and to establish priorities.

SCOPE OF ANALYSIS

The scope of work for this study included the following tasks:

- Task 1 - Data Collection

  This task involved the collection and analysis of all data related to the Kihei street system. Data collected for Kihei included an inventory of streets and intersections, geometric conditions of roadways and intersections including number of lanes, traffic control devices currently installed, peak hour turning movement traffic counts, daily traffic volumes, and a review of existing land use.

- Task 2 - Existing Traffic Conditions

  The data collected in Task 1 was used to assess the existing traffic conditions in Kihei including the volume/capacity (V/C) ratio or reserved capacity and level of service at all analyzed locations during the morning and evening peak hour, assessment of operating conditions at key intersections, and a review of safety conditions.

- Task 3 - Project Future Conditions

  Data from the County Planning Department was used to project growth in development expected over the next 10 years within the Kihei community. The countywide model was used to project growth outside of Kihei. The land use changes were used to develop Year 2005 traffic forecasts for Kihei.

- Task 4 - Traffic Impact Assessment

  The Year 2005 traffic forecasts were analyzed to assess future traffic conditions at each of the key intersections analyzed in the study. Potential problem locations were identified and used as the basis for determining where the improvements to the local street system would be required over the next 10 years.

- Task 5 - Develop Improvement Program

  The long-range 2020 highway improvement program for Kihei was used as the starting point to develop the Year 2005 improvements. The Year 2005 improvement program is designed to enable that the Year 2005 traffic volumes can be accommodated.

REPORT CONTENT

This report documents the results of the study conducted to develop the short-range traffic improvement program for Kihei. Chapter II contains a detailed assessment of the existing conditions while Chapter III provides forecasts of future conditions. Chapter IV provides a

summary of the proposed improvement program developed for Kihei. Chapter V provides implementation program for the Kihei short-range improvement program.

IV. PROPOSED IMPROVEMENT PROGRAM

The analysis of future conditions, as summarized in the previous chapter, indicates that by Year 2005, the traffic increases in Kihei due to specific growth in Kihei and islandwide growth will cause most of the street system to operate at LOS F if significant improvements to the system are not implemented. The method for determining the location and nature of the proposed improvements for Kihei is to first identify all projects proposed as part of the long range improvement program for the Island of Maui which are relevant to Kihei. These were analyzed to assess those which are appropriate for implementation within the timeframe of this study and would be the most effective in addressing the short-term issues identified above.

LONG-RANGE IMPROVEMENT PROGRAM

The long range improvement plan for the Island of Maui includes a variety of projects that were designed to address the long-range regional issues of this community. The list of long-range improvements proposed for Kihei, which are listed in Table 8 and schematically illustrated in Figures 8 and 9, include the following nine projects:

1. Reconfiguration of the Mokulele Highway/Piilani Highway intersection to make the Mokulele to Piilani the through movement and make the others maneuvers turn movements.

2. Widening of Piilani Highway from two to four lanes from Mokulele Highway to south of Kilohana Drive.

3. Construction of a new two-lane north/south collector road between Uwapo Road and Kanani Road and between Road "F" and Kilohana Drive.

4. Widening of S. Kihei Road to five lanes between Longs Drugstore and Lipoa Street.

5. Construction of new four lane road, Road "C", between S. Kihei Road and Piilani Highway located north of Lipoa Street.

6. Construction of a new two lane road, Road "A", from Road "B" and Lipoa Street located between S. Kihei Road to the new North/South Collector Road (No. 3)

TABLE 8
LONG RANGE IMPROVEMENTS

Map #	Alternative
1.	Mokulele Highway/Piilani Highway Intersection - Reconfigure intersection to create Mokulele to Piilani as through movement.
2.	Piilani Highway - Widen to Four lanes from reconfigured Mokulele Highway intersection to south of Kilohana Drive.
3.	North/South Collector - Construct new two lane north/south collector between Uwapo Road and Kanani Road and between Road "F" and Kilohana Drive. Between Waipulani Road and Lipoa Street four lane may need to be provided. Existing streets (i.e., Kenolio Road and collector road south of Welakahao Road) would be incorporated as part of the North/South Collector.
4.	South Kihei Road - Widen to five lanes between Longs and Lipoa Street. This improvement would result in four travel lanes with a continuous left-turn lane.
5.	Road "C" - Construct new four lane road between South Kihei Road and Piilani Highway. This road would provide access to the Longs/Azeka commercial area.
6.	Road "A" - Construct new two lane road between Road "B" and Lipoa Street which provides access to commercial area.
7.	Road "B" - Construct new two lane road between South Kihei Road and North/South Collector which provides access to abutting properties.
8.	Road "F" - Construct new two lane road between South Kihei Road and Piilani Highway.
9.	Upcountry-Kihei Highway - Construct new two lane highway between Kihei and Pukalani.

TABLE 10
IMPLEMENTATION PLAN
PERIOD 1996-2020

Facility	Location	Description	Estimated Cost [a]
PERIOD 1996-2000			
Road F*	In Kihei, from S. Kihei Road to Piilani Highway	New two lane connector road	$3.5 [b]
Road C	In Kihei, from Kihei Road (at Longs/Azeka commercial area) to Piilani Highway	New four lane connector road	$6.1 [b]
Piilani Highway and N. Kihei Road	Intersection at Piilani Highway and N. Kihei Road	Provide traffic signal	
S. Kihei Road	At the intersections along S. Kihei Road: • Uwapo Road • Ohukai Road • Kaonoulu Street • Road "C" • Welakahao Road • Kanani Road • Road "F" • Keonekai Road	Signalize the listed intersections	
Piilani Highway	At the intersections along Piilani Highway: • Kaonoulu Street • Waipulani Road • Welakahao Road • Road "F" • Kilohana Drive	Signalize the listed intersections	
Piilani Highway	All non-signalized intersections along Piilani Highway	Control access on Piilani Highway by limiting access to right-turn in/out only from unsignalized side streets	

Facility	Location	Description	Estimated Cost [a]
PERIOD 2001-2005			
North/South Collector Road	In Kihei, from Uwapo Road to Road F	New two lane collector road in north south direction	$23.1 [b]
Mokulele/Piilani Highway Intersection	In Kihei, at intersection of Mokulele and Piilani Highways	Reconfigure intersection making the Mokulele to Piilani move the through movement	$10.8m
S. Kihei Road	In Kihei, from Longs to Lipoa Street	Widen roadway from two to four lanes with continuous left turn lane	$0.9m
S. Kihei Road	In Kihei, from Kupuna Street to Welakahao Road	Widen roadway from two to four lanes	$0.9m
Mokulele Highway	In Central Maui, from a point 1.2 miles south of Puunene Avenue to N. Kihei Road	Widen from two to four lanes	$17.3m

TABLE 10 (Continued)
IMPLEMENTATION PLAN
PERIOD 1996-2020

Facility	Location	Description	Estimated Cost [a]
PERIOD 2006-2020 [Long Range]			
Piilani Highway	In Kihei, from Mokulele Highway to Wailea	Widen from two to four lanes	$21.6m
Upcountry-Kihei Alternative Roadway	In Upcountry, from Haleakala Highway to Piilani Highway	New two lane roadway to serve as bypass of Mokulele Highway	$57.5m

Notes: * Denotes Baseline project.
a. All cost estimates are in millions of 1995 dollars and include design and construction.
b. Cost to be the full or partial responsibility of private developers.